

Patent claims

1. Device (32) for electrical charging of a transport belt (20) for the transport of recording media (46) in the transfer printing region of an electrophotographic printer or copier,
in which a blade-like contact element (34) via which electrical charge is transferred to the transport belt (20) is arranged transverse to the running direction of the transport belt (20) and abutting on this,
and in which the blade-like contact element (34) is arranged on a carrier element (48) that can be inserted into the printer or copier and extracted from this.
2. Device (32) according to claim 1, in which catch means (54) are provided that engage when the carrier element (48) is completely inserted into the printer or copier.
3. Device (32) according to claim 1 or 2, in which a first plug element (58) is arranged on the carrier elements [sic] (48) or on the blade-like contact element (34), a second plug element is arranged in the printer or copier, and the first plug element and second plug element form with one another an electrical plug connection when the carrier element (48) is completely inserted into the printer or copier.
4. Device (32) according to any of the preceding claims, in which the carrier element (48) has a recess into which the blade-like contact element (34) (which is preferably attached to the carrier element (48) such that it can be detached) can be inserted with positive fit.

5. Device (32) according to claim 4, in which the recess comprises at least one groove (76, 82).
6. Device (32) according to claim 4 or 5, in which the blade-like contact element (34) is retained in the recess by at least one spring-borne pressure pin (78) that is pre-stressed against the blade-like contact element (34).
7. Device (32) according to claim 6, in which the blade-like contact element (34) has a gap (66) in which the pressure pin (78) engages when the blade-like contact element (34) is inserted into the recess of the carrier element (48).
8. Device (32) according to any of the preceding claims, in which the blade-like contact element (34) comprises a plastic film (68) that produces the electrical contact with the transport band (20).
9. Device (32) according to claim 8, in which the plastic film is comprised of polyimide.
10. Device (32) according to claim 8 or 9, in which the electrical resistance of the plastic film (68) is reduced by interspersed carbon black particles.
11. Device (32) according to claim 8 or 9, in which the electrical volume resistance of the plastic film (68) is between 10^2 and $10^9 \Omega\text{cm}$, preferably between 10^6 and $10^8 \Omega\text{cm}$.
12. Device (32) according to any of the claims 8 through 11, in which the electrical surface resistance of the plastic film (68) is between 10^2 and $10^{12} \Omega/\text{sq}$, preferably between 10^{10} and $10^{12} \Omega/\text{sq}$.

13. Device (32) according to any of the claims 8 through 12, in which the thickness of the plastic film (68) is between 50 μm and 100 μm .
14. Device (32) according to any of the claims 4 through 7 and any of the
5 claims 8 through 13, in which the blade-like contact element (34) comprises an angle plate with a first section (60) and a second section (62) that together form an angle,

whereby the plastic film (68) is attached on the first section (60) and the
10 second section (62) can be at least partially inserted into the recess of the carrier element (48).
15. Device (32) according to claim 14, in which the second section (62) has at least one recurved section (64) at which the blade-like contact element (34)
15 can be gripped upon insertion into or, respectively, upon removal from the recess of the carrier element (48).
16. Device (32) according to claim 14 or 15, in which electrical contacts are arranged on the carrier element (48), which electrical contacts contact the
20 angle plate when it is inserted into the recess of the carrier element (48).
17. Blade-like contact element (34) for charging of a transport belt (20) for the transport of recording media (46) in the transfer printing region of an electrophotographic printer or copier device,
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with a first section (60) on which a plastic film (68) is attached, which first section (60) is suitable to produce an electrical contact with the transport belt (20),

and with a second section (62) for attachment of the blade-like contact element (34) to a carrier element (48) which can be inserted into the printer or copier.

- 5 18. Blade-like contact element (34) according to claim 17, in which the plastic film (68) is comprises of polyimide.
19. Blade-like contact element (34) according to claim 17 or 18, in which the electrical resistance of the plastic film (68) is reduced via interspersed carbon black particles.
- 10 20. Blade-like contact element (34) according to any of the claims 17 through 19, in which the volume resistance of the plastic film (68) is between 10^2 and $10^9 \Omega\text{cm}$, preferably between 10^6 and $10^8 \Omega\text{cm}$.
- 15 21. Blade-like contact element (34) according to any of the claims 17 through 20, in which the electrical surface resistance of the plastic film (68) is between 10^2 and $10^{12} \Omega/\text{sq}$, preferably between 10^{10} and $10^{12} \Omega/\text{sq}$.
- 20 22. Blade-like contact element (34) according to any of the claims 17 through 21, in which the thickness of the plastic film (68) is between $50 \mu\text{m}$ and $100 \mu\text{m}$.
23. Blade-like contact element (34) according to any of the claims 17 through 22, in which the first section (60) and a second section (62) are sections of an angle plate that together form an angle,
- 25 24. Blade-like contact element (34) according to claim 23, in which the second section (62) has at least one recurved section (64) at which the blade-like contact element (34) can be gripped upon insertion into or, respectively, upon removal from the recess of the carrier element (48).
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25. Blade-like contact element according to any of the claims 17 through 24 that is fashioned for use in a device according to any of the claims 1 through 16.
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26. Method for electrostatic charging of a transport belt (20) for the transport of recording media (46) in the transfer printing region (48) [sic] of an electrophotographic printer or copier,
- 10 in which the electrical charge is transferred to the transport belt (20) via a blade-like contact element (34) arranged transverse to the running direction of the transport belt (20) and abutting on this,
- whereby the blade-like contact element is arranged on a carrier element (48) that can be inserted into the printer or copier and extracted from this.
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27. Method according to claim 26, in which a first plug element (58) is arranged on the carrier element (48) or on the blade-like contact element (34), a second plug element is arranged in the printer or copier, and in
- 20 which an electrical plug connection is formed by the first plug element and the second plug element when the carrier element (48) is completely inserted into the printer or copier.
28. Method according to claim 26 or 27, in which the carrier element (48) has a recess into which the blade-like contact element (34) can be inserted with positive fit.
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29. Method according to claim 28, in which the recess comprises at least one groove (76, 82).
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- 30. Method according to claim 28 or 29, in which the blade-like contact element (34) is retained in the recess by at least one spring-borne pressure pin (78) that is pre-stressed against the blade-like contact element (34).
- 5 31. Method according to any of the claims 26 through 30, in which the blade-like contact element (34) comprises a plastic film (68) (in particular a plastic film made from polyimide) that produces the electrical contact with the transport band.